

ABSTRACT OF THE DISCLOSURE

A tunneling insulating film is formed on the partial surface area of a semiconductor substrate. A floating gate electrode is formed on the tunneling insulating film. A gate insulating film covers the side wall of the floating gate electrode and a partial surface area of the semiconductor substrate on both sides of the floating gate electrode. A first control gate electrode is disposed on the gate insulating film over the side wall of the floating gate electrode and over a partial surface area of the semiconductor substrate on both sides of the floating gate electrode. A pair of impurity doped regions is formed in a surface layer of the semiconductor substrate on both sides of a gate structure including the floating gate structure and first control gate structure.